

LIHUE PLANTATION COMPANY, BAGASSE STORAGE BUILDING
Haleko Road
Lihue
Kauai County
Hawaii

HAER HI-82-A
HI-82-A

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

FIELD RECORDS

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
U.S. Department of the Interior
1849 C Street NW
Washington, DC 20240-0001

HISTORIC AMERICAN ENGINEERING RECORD

BAGASSE STORAGE BUILDING LIHUE PLANTATION COMPANY SUGAR MILL

HAER No. HI-82-A

<u>Location:</u>	Haleko Road Lihue County of Kauai Hawaii USGS 7.5 minute series topographic map, Lihue, HI 1983 Universal Transverse Mercator (UTM) coordinates: 04.458160.2431520
<u>Date of Construction:</u>	1964
<u>Engineers & Builders:</u>	Pascoe Steel Corporation
<u>Present Owner:</u>	Lihue MS, LLC
<u>Present Occupant:</u>	Vacant
<u>Present Use:</u>	Abandoned
<u>Significance:</u>	The Bagasse Storage Building is associated with the history and development of Lihue Plantation Company Sugar Mill. It is a good example of a bagasse storage building in Hawaii, which reflects its 1960s period in its materials, method of construction, and design.
<u>Report Prepared by:</u>	Don J. Hibbard, Ph.D. Architectural Historian Mason Architects, Inc. 119 Merchant Street, Suite 501 Honolulu, HI 96813
<u>Date:</u>	October 2008

GENERAL DESCRIPTION AND LOCATION

The use of a separate building to store bagasse became popular in Hawaii during the 20th century. It was viewed as a way to minimize fire hazards, and to allow for more efficient operation of a mill's boiler plant. In 1937, when contemplating the construction of such a building at Lihue Mill, it was projected such a storage space would need to hold approximately two hundred twenty-five tons of bagasse, the equivalent of six hours of grinding with both mill trains in operation. At ten pounds per cubic foot, this translated into a structure approximately 100' long and 40' wide, with bagasse piled twelve feet high.

The Lihue Plantation Mill Company did not construct a bagasse storage building on its premises until 1964. When they did so, it was five times larger in volume than the structure envisioned in 1937.

The Bagasse Storage Building is located on the premises of the Lihue Plantation Company Sugar Mill. The 81'-4" x 260' building sits at an angle approximately 65' from the mill building on its northwest side. It sits on a concrete slab foundation and has a standing seam metal, front facing gable roof with thirteen 24" rotary vents along the ridgeline. Rising 44'-8" to the peak of its gable, it is the second largest building remaining on the mill premises.

The building is thirteen bays long, with each bay being 20' in length. Steel columns define the bays. These columns have flanged edges and flare outward as they ascend, going from 1'-9" at the base to 3'-2" at the top. Similarly shaped beams rise from the columns to support the roof. Reinforced concrete walls, 1'-9-1/2" thick, rise 10', encasing the lower portion of the columns, before yielding to corrugated metal walls that ascend 22'-2-1/2" to the eaveline. At an unknown date, the lower 14' of the corrugated metal wall was sheathed on the interior with iron plates, in order to protect the walls from damage by the front loaders handling the bagasse. Originally the building had four openings, one in each wall. Each of the openings is 12' wide and 15'-7" high and had a pair of split sliding doors. The two end openings are centered on their facades, as is the opening in the north wall. The opening on the south wall is in the eighth bay from the front. In 1980, a second opening, 15' wide, was made in the south wall in the fifth bay from the front, and an approximately 6' deep, concrete lined storage pit was excavated next to the opening on the exterior of the storage building. This alteration was undertaken to accommodate the need to convey the bagasse to the new power plant, completed in 1980 and standing immediately to the south of the bagasse storage building. Neither the belt conveyor which ran from the bottom of the pit, nor the power plant remain standing. The opening to the pit has metal clad sides.

Originally two sets of conveyors transported the bagasse into and out of the storage building. Neither of these systems remain. An 8'-4" x 8' framed opening, centered near the top of the front gable end, accommodated a belt conveyor which brought the bagasse from the mill to the storage building. The belt conveyor is no longer extant;

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however, 8" I beams remain suspended from the ceiling of the bagasse storage building and run the depth of the building. These were part of the rigid frame which held the feed conveyor. Below the opening for the feed conveyor is a second framed opening of equal size which accommodated the Distribution and Return Conveyor that transported the bagasse to the Boiler House, where it was burned to generate the steam necessary to operate the mill. To the left of the two conveyor openings was an in-swing door and a platform set at 30'-5" above the floor, which allowed workers to service and oversee the operation of the two conveyors. The door and the interior ladder which accessed it are no longer extant, with a hole in the wall where the door once held sway. The conveyors were manufactured by Robbins Engineers, a division of Hewitt-Robbins Inc. of Los Angeles.

The Lihue Plantation Sugar Mill is located on Tax Map Key (TMK) parcels 3-8-004: 007 and 3-8-005:009. It is situated in the Nawiliwili Stream Valley on the periphery of Lihue's town center on Haleko Road.

HISTORICAL CONTEXT

See the HAER Report (HAER No. HI-82-A) for the Lihue Plantation Company Sugar Mill for the development of the Lihue Plantation Company's sugar mill.

SOURCES

Original Drawings:

Over 1,000 original drawings and blue prints for the Lihue Plantation Company Sugar Mill and its machinery exist. These abandoned drawings were discovered in the mill office, and are incomplete. The plans will be deposited in an appropriate repository, which has yet to be determined. The following provided information for this report.

Title & Sheet #	Date	Office in Title Block	Drawn by	Drawing Number
Plan of Lihue Mill and Premises Showing Fire Hydrants	June 22, 1955 Updated 9/65	Lihue Plantation	F.M	29-41
Floor Plan Bagasse Storage Building	July 11, 1963	Pascoe Steel Corporation	DeBoer	A-1 Job F-356
Frame Section Bagasse Storage Building	July 12, 1963	Pascoe Steel Corporation	DeBoer	S-1 Job F-356
Roof Framing Plan Bagasse Storage Building	August 21, 1963	Pascoe Steel Corporation	DeBoer	S-6 Job F-356
End Wall Elevation Bagasse Storage Building	August 21, 1963	Pascoe Steel Corporation	DeBoer	S-5A Job F-

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				356
End Wall Elevation Bagasse Storage Building	July 11, 1963	Pascoe Steel Corporation	DeBoer	S-5 Job F-356
Side Wall Elevations Bagasse Storage Building	August 21, 1963	Pascoe Steel Corporation	DeBoer	S-4 Job F-356
Framing Details, Standard Steel Building All Spans	December 1, 1957	Pascoe Steel Corporation	DeBoer	S-3 Job F-356
Feed Conveyor	February 1964	Robbins Engineers		RL-1739 W-2
Key Plan	February 1964	Robbins Engineers		RL-1739 W-1
Conveyors	February 1964	Robbins Engineers		RL-1739 W-4

Lihue Plantation Company Records:

The Hamilton Library at the University of Hawaii at Manoa serves as the repository for the Hawaiian Sugar Planters' Association's (HSPA) Plantation Archives. Approximately 140.5 cubic feet of materials pertain to the Lihue Plantation Company, the third largest record group within the HSPA collection. The following files provided useful information:

"Five Year Factory Plan" Letter of September 8, 1937 from American Factors Ltd., to Lihue Plantation Company.

PROJECT INFORMATION

The following documentation was prepared in response to the proposal to demolish the historic property and build housing on the 13.8 acre Lihue Mill property. The purpose of this documentation is to historically record the architectural and mechanical elements of the mill and its supporting structures. The property owner and the Hawaii State Historic Preservation Division (SHPD) have agreed that the mill complex is over fifty years old. The SHPD in a July 15, 2008 letter indicated that the office believed the mill complex met the criteria for inclusion in the National Register of Historic Places. SHPD recommended that HABS documentation be completed and submitted to the National Park Service as a means of mitigating the loss of this historic property. The owner agreed to the SHPD's request for documentation, and after further discussion between Mason Architects and SHPD concerning the presence of intact machinery in the mill, it was decided the documentation would follow Historic American Engineering Record (HAER) standards.

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The project manager for the HAER documentation was Polly Cosson Tice of Mason Architects, Inc. Don J. Hibbard, Ph.D. and Wendy Wichman of Mason Architects were the researchers and authors of the reports. Both Polly Cosson Tice and Don Hibbard are architectural historians who meet the Secretary of the Interior's Professional Qualifications in architectural history. Carol Stimson of Mason Architects assisted with the editing and production of the reports. The large-format photographs were taken by David Franzen of Franzen Photography.

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Location Map
U.S.G.S. Lihue, Hawaii, 1983:

